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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,146	09/20/2005	Dirk Geilfus	2003P03718WOUS	7443

7590 12/26/2007

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EXAMINER	
KAO, JUTAI	
ART UNIT	**PAPER NUMBER**
2616	
MAIL DATE	**DELIVERY MODE**
12/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/550,146	KELL MICHAEL JENSEN	
	Examiner	Art Unit	
	Ju-Tai Kao	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 September 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/20/2005, 12/09/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the current drawings lack the description of what each of the boxes represent. It is required that all labeled elements in the drawing to also be labeled with descriptive texts explaining what each elements represent. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Jensen (US 2002/0186653).

Jensen discloses a method to provide redundancy in network including the following features.

Regarding claim 1, a method for routing telecommunications traffic between a network (see network system 100 in Fig. 1) and a sub-network (see sub-network including routers 104-110 and clients 112-120 in Fig. 1), in which routing devices of the sub-network route the traffic in the sub-network according to a redundancy protocol (see "VRRP system, one router may be elected as the master router with the other routers

acting as backups in case of the failure of the master router" recited in paragraph [0009]; or see ""standby router" as used herein may refer to a network node that operates as part of an alternate path to route information" recited in paragraph [0013]; both paragraphs show methods of redundant routing), the method comprising the steps of: setting criteria that relates to a condition of the network to the redundancy protocol of the sub-network (see "VRRP system, one router may be elected as the master router with the other routers acting as backups in case of the failure of the master router" recited in paragraph [0009], wherein the failure is the criteria); triggering switching between the routing devices according to the redundancy protocol (see "VRRP system, one router may be elected as the master router with the other routers acting as backups in case of the failure of the master router" recited in paragraph [0009]; that is, when master fails, traffics are switch to the backup routers).

Regarding claim 17, a system for routing communications traffic (see network system 100 in Fig. 1), comprising: a network for sending and/or receiving the telecommunication traffic (see network system 100 and/or network 102 in Fig. 1); a sub-network for receiving and/or sending the telecommunications traffic from or/to the network (see sub-network including routers 104-110 and clients 112-120 in Fig. 1); routing devices (see routers 104-110 in Fig. 1) for routing the telecommunications traffic in the sub-network according to a redundancy protocol (see "VRRP system, one router may be elected as the master router with the other routers acting as backups in case of the failure of the master router" recited in paragraph [0009]; or see ""standby router" as used herein may refer to a network node that operates as part of an alternate path to

route information" recited in paragraph [0013]; both paragraphs show methods of redundant routing); and a criteria that relates a condition of the network to the redundancy protocol (see "VRRP system, one router may be elected as the master router with the other routers acting as backups in case of the failure of the master router" recited in paragraph [0009], wherein the failure is the criteria);, thereby causing the routing devices to route the telecommunications traffic according to the condition in the network (see "VRRP system, one router may be elected as the master router with the other routers acting as backups in case of the failure of the master router" recited in paragraph [0009]; that is, when master fails, traffics are switch to the backup routers).

Regarding claim 18, wherein the network is an Internet Protocol network (see "IP" recited in paragraph [0009]).

Regarding claim 19, wherein the redundancy protocol is a virtual router redundancy protocol (see "VRRP" recited in paragraph [0009]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 2-7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 2, wherein the criteria relates an interruption in a link of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 3, wherein the criteria relates a number of bit failures of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 4, wherein the criteria relates a number of bit failures of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 5, wherein the criteria relates traffic load of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 6, wherein the criteria relates traffic load of a router interface between the network and the sub-network to switching of the router devices according to the redundancy protocol; regarding claim 7, wherein the criteria relates traffic load of a router interface between the network and the sub-network to switching of the router

devices according to the redundancy protocol; regarding claim 16, wherein the criteria relates a number of resources of the network available to switching of the router devices according to the redundancy protocol.

Thang discloses a restoration of IP networks using precalculated restoration routing tables including the following features.

Regarding claim 2, wherein the criteria relates an interruption in a link (see Fig. 5, which shows a link interruption between nodes 2 and 3, and the corresponding rerouting scheme) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 3, wherein the criteria relates a number of bit failures (see "Failures...high bit error rate" recited in paragraph [0009]) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 4, wherein the criteria relates a number of bit failures (see "Failures...high bit error rate" recited in paragraph [0009]) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices

(see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 5, wherein the criteria relates traffic load (see "Failures...congestion" recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 6, wherein the criteria relates traffic load (see "Failures...congestion" recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 7, wherein the criteria relates traffic load (see "Failures...congestion" recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) of a router interface between the network and the sub-network (Jensen discloses the network/sub-network architecture as discussed in the above paragraphs) to switching of the router devices (see the secondary routing scheme in Fig. 5c) according to the redundancy protocol (disclosed in Jensen).

Regarding claim 16, wherein the criteria relates a number of resources of the network available (see "Failures...addition of resources" recited in paragraph [0009],

that is, by adding resources, the number of resources of the network system changes, which is considered as a failure condition requiring restoration in Thang's system) to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Thang, in order to provide fast recovery in different network failure conditions.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Callon (US 2002/0131362).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 8, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Callon discloses a method of network routing using link failure information including the following features.

Regarding claim 8, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current topology" recited in paragraph [0025], that is, the unavailability update message of the route in

routing table triggers the switching and the routing table update) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Callon, in order to provide fast recovery in different network failure conditions.

7. Claim 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898) as applied to claim 2, 3 and 5 above, and further in view of Callon (US 2002/0131362).

Jensen and Thang disclose the claimed limitations as shown in the above paragraphs.

Jensen and Thang do not disclose the following features: regarding claim 9, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol; regarding claim 10, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol; regarding claim 11, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Callon discloses a method of network routing using link failure information including the following features.

Regarding claim 9, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current topology" recited in paragraph [0025], that is, the unavailability update message of the route in routing table triggers the switching and the routing table update) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Regarding claim 10, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current topology" recited in paragraph [0025], that is, the unavailability update message of the route in routing table triggers the switching and the routing table update) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Regarding claim 11, wherein the criteria relates an availability of a router interface between the network and the sub-network according to a routing table (see "router 4D receives an update message from router 4C indicating that this route is also unavailable does the routing table of router 4D converge to accurately reflect the current

topology" recited in paragraph [0025], that is, the unavailability update message of the route in routing table triggers the switching and the routing table update) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen and Thang using features, as taught by Callon, in order to provide fast recovery in different network failure conditions.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Lee (US 2003/0023893).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 12, wherein the criteria relates a number of entries in a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Lee discloses a fault-tolerant routing scheme for a multi-path interconnection fabric in a storage network including the following features.

Regarding claim 12, wherein the criteria relates a number of entries in a routing table (see "For example, if the interconnection fabric has four independent routes between each node pair...all four of the paths may be stored as entries in a routing table..." recited in paragraph [0074]; that is, in this example, a number of four entries are related to the switching according to the redundancy protocol) coupled to the

network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Lee, in order to provide fast recovery in different network failure conditions.

9. Claim 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898) as applied to claim 2 and 3 above, and further in view of Lee (US 2003/0023893).

Jensen and Thang disclose the claimed limitations as shown in the above paragraphs.

Jensen and Thang do not disclose the following features: regarding claim 13, wherein the criteria relates a number of entries in a routing table coupled to the network to switching of the router devices according to the redundancy protocol; regarding claim 14, wherein the criteria relates a number of entries in a routing table coupled to the network to switching of the router devices according to the redundancy protocol.

Lee discloses a fault-tolerant routing scheme for a multi-path interconnection fabric in a storage network including the following features.

Regarding claim 13, wherein the criteria relates a number of entries in a routing table (see "For example, if the interconnection fabric has four independent routes between each node pair...all four of the paths may be stored as entries in a routing table..." recited in paragraph [0074]; that is, in this example, a number of four entries

are related to the switching according to the redundancy protocol) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Regarding claim 14, wherein the criteria relates a number of entries in a routing table (see "For example, if the interconnection fabric has four independent routes between each node pair...all four of the paths may be stored as entries in a routing table..." recited in paragraph [0074]; that is, in this example, a number of four entries are related to the switching according to the redundancy protocol) coupled to the network to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen and Thang using features, as taught by Lee, in order to provide fast recovery in different network failure conditions.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen (US 2002/0186653) in view of Thang (US 2002/0167898) and Nagami (US 2005/0100025).

Jensen discloses the claimed limitations as shown in the above paragraphs.

Jensen does not disclose the following features: regarding claim 15, wherein the criteria relates a load of a processor involved in routing the telecommunications traffic to switching of the router devices according to the redundancy protocol.

Thang discloses a restoration of IP networks using precalculated restoration routing tables including the following features.

Regarding claim 15, wherein the criteria relates a load of a processor involved in routing the telecommunications traffic (see "Failures...congestion" recited in paragraph [0009], wherein congestion is known to be a condition of traffic overload) to switching of the router devices according to the redundancy protocol (disclosed in Jensen).

Nagami discloses a network interconnection apparatus, network node apparatus, and packet transfer method including the following features.

Regarding claim 5, wherein congestion could a network congestion or a CPU overload congestion (see "congestion at the CPU within the router and the network" recited in paragraph [0247]).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Jensen using features, as taught by Thang and Nagami, in order to provide fast recovery in different network failure conditions.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ju-Tai Kao whose telephone number is (571)272-9719. The examiner can normally be reached on Monday ~Friday 7:30 AM ~5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on (571)272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

Ju-Tai Kao